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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,500	01/23/2004	Jeff Moler	VTE-150-C	7226

7590 08/11/2005

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EXAMINER

LOPEZ, FRANK D

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/763,500

Applicant(s)

MOLER ET AL

Examiner

F. Daniel Lopez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 16, 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-16, 18-21, 23-28 and 30 is/are rejected.
- 7) ☒ Claim(s) 8, 17, 22 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/2/5, 7/11/5</u> | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Applicant's arguments filed May 16, 2005, have been fully considered but they are not deemed to be persuasive.

Applicant's arguments with respect to claims 9, 18 and 30 (dealing with the center biasing means) have been considered but are deemed to be moot in view of the new grounds of rejection. The new grounds of rejection are necessitated by applicant's arguments. Applicant's arguments indicate that the biasing means bias the piston to one or the other end, rather than to the center (see discussion of objection to the specification), and that Morita et al has this biasing means.

Applicant argues that the combination of Stephenson et al and Rector et al would impermissibly change the operation of Stephenson et al, such that it is non-functional, but doesn't say why. The examiner disagrees. The modified Stephenson et al would work just like the original Stephenson et al, including that an operator would control the movement of the piston. The modification would cause the piston to slow down only when it approaches its end of stroke, even if the operator command is to not slow down.

Applicant argues that the combination of Stephenson et al and Rector et al would not meet the claim limitations, stating that the combination would not control the position of the piston, and that the control valves are not proportional flow valves. Applicant is mistaken. Claims 23, 25 and 26 do not claim that the position of the piston is controlled, rather it claims that "controlling respective positions of the at least two valves in response to position measured by the at least one position sensor". The valves of Stephenson et al are proportional flow valves (see e.g. column 3 line 43). The combination of Stephenson et al and Rector et al would not change the type of valves used. Similar arguments made concerning the combination of Stephenson et al, Morita et al and Rector et al, is similarly answered.

Applicant argues that it is not obvious to add position sensors to the system of Stephenson et al, using the teachings of Morita et al and Rector et al, since the system of Stephenson et al uses pressure sensors. Although the system of Stephenson et al uses pressure sensors; one of ordinary skill would recognize that it still has the problem of slowing the piston down when it approaches its end limits (as taught by Rector et al) and would recognize that the system of Morita et al can be used to do the slowing down, by determining when to start the slowing down process. Therefore, it would have been obvious to add the position sensors, as taught by Morita et al and Rector et al.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Specification

The disclosure is objected to because of the following informalities: paragraph 23 states that "various means can be provided for biasing the piston 18 toward the discreet centered position...the biasing means can include...a return spring force. If two expandable chambers 14, 16 are provided...the biasing means corresponds to the second...chamber". This is incorrect. The above discussed biasing means biases the piston to an opposite end position, not to the centered position. By definition, biasing a piston to its center position would result in the piston moving to the center position when there is no other force. Since the above biasing means would move the piston to the opposite end, rather than to its center position, they are not center biasing means. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9, 18 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In claim 9 line 2, claim 18 line 3 and claim 30 line 3 "means for biasing the piston toward the discrete centered position" is unsupported by the specification, since the disclosed biasing means does not bias the piston to its center position (see objection to the specification above).

Claim Rejections - 35 USC § 103

Claims 23, 25, 26 and 30 are rejected under 35 U.S.C. § 103 as being unpatentable over Stephenson et al in view of Rector et al. Stephenson et al discloses an apparatus for controlling a position of a fluid cylinder (16, 36), having first and second expandable chambers (e.g. 18, 19), defined by a piston (e.g. 15), adjacent first and second ends, respectively, of the cylinder, comprising first and second pressure sensors (e.g. 29, 30, respectively) associated with the first and second chambers, respectively; first and second electrically actuated proportional flow valves (e.g. 21, 22, respectively) for selectively and proportionally controlling flow into and out of, respectively, of the first chamber; a controller having a control program operably connected to the valves and pressure sensors, to control the valves in response to pressures measured by the pressure sensor; but does not disclose that there is at least one discrete position sensor for sensing a discrete predetermined position of the piston, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor.

Rector et al teaches, for an apparatus for controlling a position of a fluid cylinder (16), having first and second expandable chambers (17, 18), defined by a piston, adjacent first and second ends, respectively, of the cylinder, comprising electrically actuated flow valve (36) for controlling flow into and out of the first chamber; and a controller (73) having a control program operably connected to and controlling the valve; that there is at least on discrete position sensor (e.g. 74) for sensing a discrete

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predetermined position of the piston, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor, for the purpose of reducing the speed of the piston when it nears its end of stroke position (column 1 line 66- column 2 line 3).

Since Stephenson et al and Rector et al are both from the same field of endeavor, the teachings disclosed by Rector et al would have been recognized in the pertinent art of Stephenson et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to include at least on discrete position sensor for sensing a discrete predetermined position of the piston of Stephenson et al, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor, as taught by Rector et al, for the purpose of reducing the speed of the piston when it nears its end of stroke position.

Claims 1-7, 9-16, 18-21, 23-28 and 30 are rejected under 35 U.S.C. § 103 as being unpatentable over Stephenson et al in view of Morita et al, and Rector et al. Stephenson et al discloses an apparatus for controlling a position of a hydraulic type fluid cylinder (16, 36), having first and second expandable chambers (e.g. 18, 19), defined by a piston (e.g. 15), adjacent first and second ends, respectively, of the cylinder, and method, comprising first and second pressure sensors (e.g. 29, 30, respectively) associated with the first and second chambers, respectively; first, second, third and fourth electrically actuated proportional flow valves (e.g. 21, 22, 23, 24, respectively) for selectively and proportionally controlling flow into and out of, respectively, of the first and second chambers, respectively; a controller having a control program operably connected to the valves and pressure sensors, to control the valves in response to pressures measured by the pressure sensor; but does not disclose that the valves are connected to a manifold having an inlet port an exhaust port and an outlet port; that there is first, second and third position sensors located adjacent a midpoint of the operating stroke and adjacent an end and an opposite end of the travel of the piston, respectively, for sensing discrete predetermined positions of the

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piston, wherein the position sensors are connected to the controller, such that the valve is controlled in response to the positions measured by the position sensors; or that the controller initializes a home position when the piston is sensed by the first position sensor.

Morita et al teaches, for an apparatus for controlling a position of a air type fluid cylinder (34), having first and second expandable chambers (34a, 34b), defined by a piston (36), adjacent first and second ends, respectively, of the cylinder, and method, comprising electrically actuated flow valve (30) for controlling flow into and out of the first chamber; and a controller (90) having a control program operably connected to and controlling the valve; that there is first, second and third position sensors (e.g. 38, 42, 44, respectively) located adjacent a midpoint of the operating stroke and adjacent an end and an opposite end of the travel of the piston, respectively, for sensing discrete predetermined positions of the piston, wherein the position sensors are connected to the controller, such that the valve is controlled in response to the positions measured by the position sensors, that the controller initializes a home position when the piston is sensed by the first position sensor (by steps s6 and s7 of fig 5), for the purpose of stopping the piston at its end of stroke position in a shock free state, without requiring any position adjustment of the position sensors (column 1 line 54-58).

Rector et al teaches, for an apparatus for controlling a position of a hydraulic type fluid cylinder (16), having first and second expandable chambers (17, 18), defined by a piston, adjacent first and second ends, respectively, of the cylinder, and method, comprising electrically actuated flow valve (36) for controlling flow into and out of the first chamber; and a controller (73) having a control program operably connected to and controlling the valve; that there is at least one discrete position sensor (e.g. 74) for sensing a discrete predetermined position of the piston, wherein the position sensor is connected to the controller, such that the valve is controlled in response to the position measured by the position sensor, for the purpose of reducing the speed of the piston when it nears its end of stroke position (column 1 line 66- column 2 line 3), to limit shocks when stopped at its end position (e.g. column 1 line 15-21).

Since Stephenson et al discloses a hydraulic type cylinder, since Rector et al teaches a need for limiting shocks when a piston of a hydraulic type cylinder approaches an end position, and since Morita et al teaches a method of limiting shocks when a piston of a fluid cylinder approaches an end position; one having ordinary skill in the art would recognize that the purpose disclosed by Morita et al would have been recognized in the pertinent art of Stephenson et al, due to the teachings of Rector et al. It would have been obvious at the time the invention was made to one having ordinary skill in the art to include first, second and third position sensors located adjacent a midpoint of the operating stroke and adjacent an end and an opposite end of the travel of the piston of Stephenson et al, respectively, for sensing discrete predetermined positions of the piston, wherein the position sensors are connected to the controller, such that the valve is controlled in response to the positions measured by the position sensors, with the controller initializing a home position when the piston is sensed by the first position sensor, as taught by Morita et al, for the purpose of stopping the piston at its end of stroke position in a shock free state, without requiring any position adjustment of the position sensors.

Conclusion

Claims 8, 17, 22 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment and arguments necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

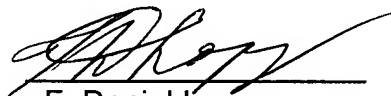
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571- 272-4821. The examiner can normally be reached on Monday-Thursday from 6:15 AM -3:45 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.

A handwritten signature in black ink, appearing to read 'F. Daniel Lopez', is written over a horizontal line.

F. Daniel Lopez
Primary Examiner
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August 08, 2005